

ABSTRACT

A centralizer apparatus has been developed which, in one aspect, has a tubular body with an exterior surface, a collar movably emplaced around the tubular body and movable longitudinally thereon, a plurality of spring bows, each spring bow having a first end spaced apart from a second end, each spring bow biased outwardly from the tubular body, the first ends connected to the tubular body, the second ends connected to the first collar, so that upon movement of the first collar the spring bows move toward the tubular body. In one aspect the collar is connected to bottom ends of the spring bows and is initially movable to abut a stop on the tubular body so that from that point on the spring bows are pulled into another tubular, e.g. casing, as the centralizer apparatus moves down into the casing. In another embodiment two movable collars are used, one at each end of the spring bows.